NEMESYS

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User Manual

MAGCHEX valve

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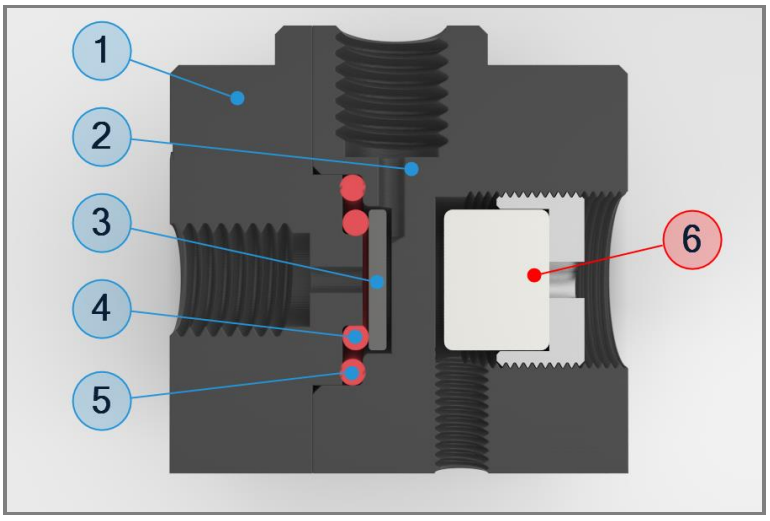
1. Preamble

This manual is to support the user in the correct handling and the maintenance of cetoni's MAGCHEX check valves.

2. Technical Data & Handling

2.1. Wetted Materials

The following sectional view shows the individual components of the MAGCHEX check valves. All parts in contact with the fluid are shown with blue identifiers, those of non-wetted parts with red identifiers. In addition, the table below details the materials. Please ensure material compatibility with the respective fluid that is to be used.

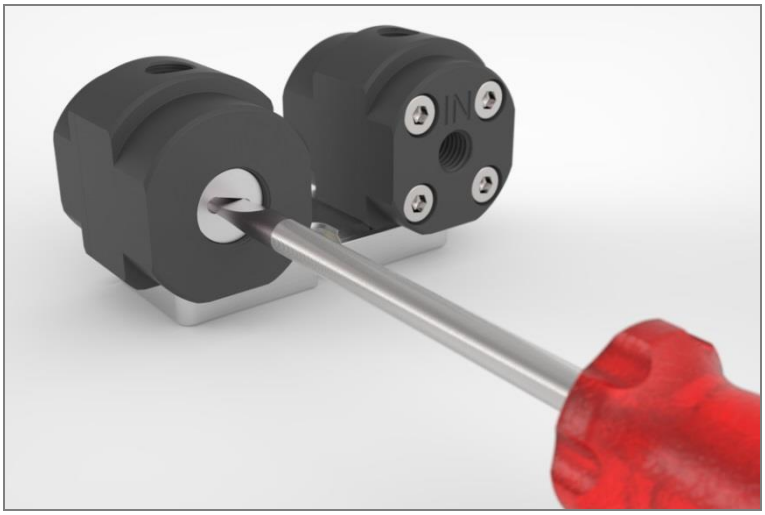


#	Description	Material
1	inlet housing	PPS GF40 - Polyphenylene sulfide with 40% glass fibre
2	outlet housing	
3	sealing disc	magnet, Parylene C-coated
4	flow seal O-ring	FFKM (Perlast G60A)
5	housing seal O-ring	FFKM (Perlast G80A)
6	adjustment screw	[no media contact (magnet)]

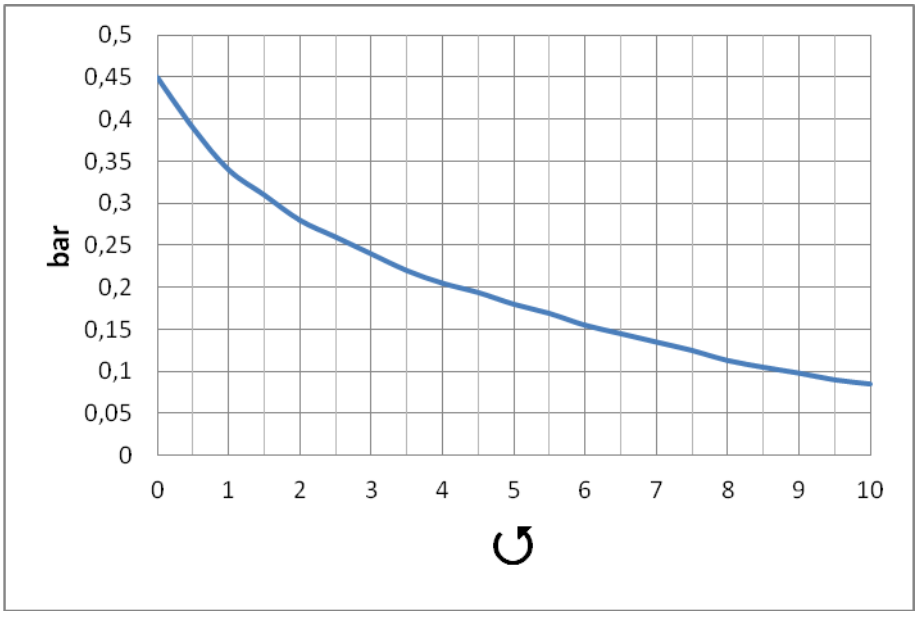
2.2. Cracking Pressure Adjustment

The opening or cracking pressure of the MAGCHEX is continuously adjustable between 0.1 and 0.5 bar via the adjustment screw.

Fully tightened, the cracking pressure is the highest. Turn the adjustment screw counter clockwise to reduce the cracking pressure as required.



The following graph plots the cracking pressure vs. the number of turns of the adjustment screw relative to the fully-tight position for the use with water and a flow rate of 5 µl/s:



After prolonged time of nonuse, sealing disc and flow seal can stick together and cause a higher initial opening pressure.

2.3. Maximum Working & Burst Pressures

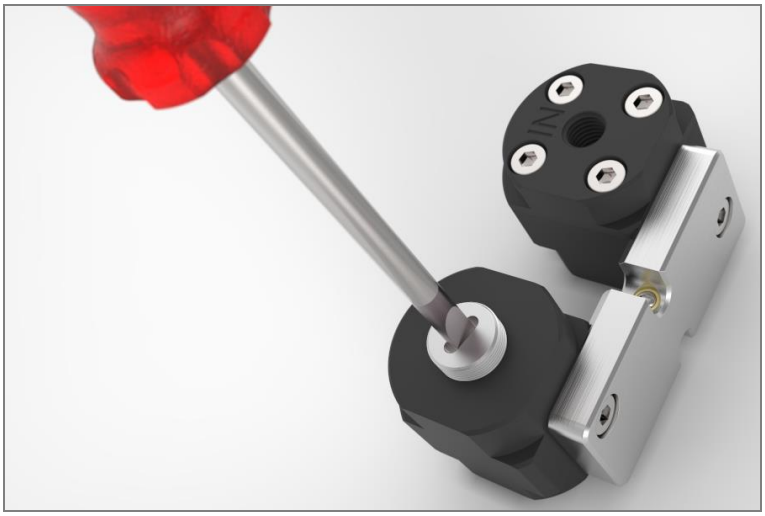
The maximum working pressure of the MAGCHEX check valves is 200 bar, which may be surpassed temporarily by 50 bar. The burst pressure is 320 bar.

3. Maintenance

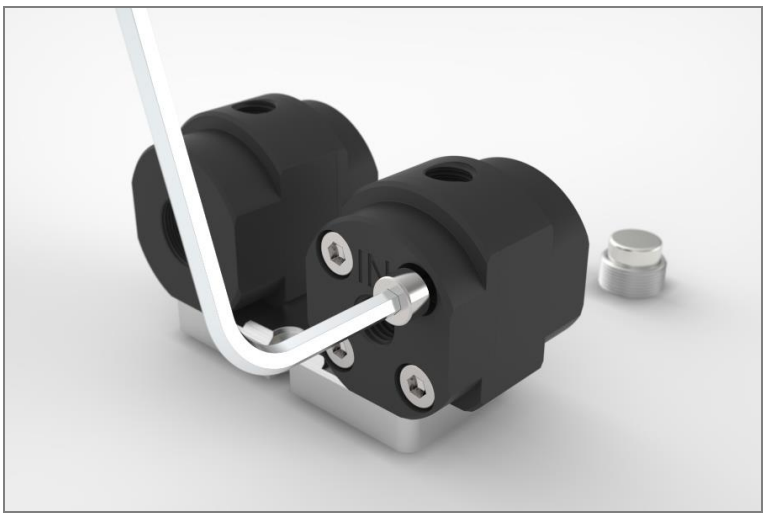
After use with aggressive fluids, please thoroughly cleanse the check valve with distilled water followed by, if possible, drying with compressed air.
If this procedure is not feasible as well as prior to extended periods of nonuse, you should disassemble and dry the valves. Otherwise, and in particular at tiny spots with insufficient/imperfect coating of the magnetic sealing disc, corrosion may occur which may limit the use time of the device.
Disassembly of the valve is also necessary before changing the O-rings or the sealing disc. To do this, please proceed as follows:

3.1. Disassembly

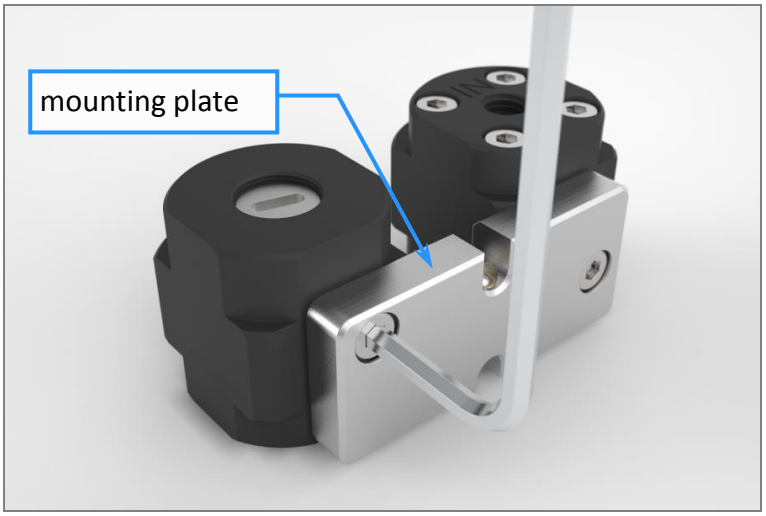
1. Using a screwdriver and turning it counterclockwise, remove the adjustment screw.



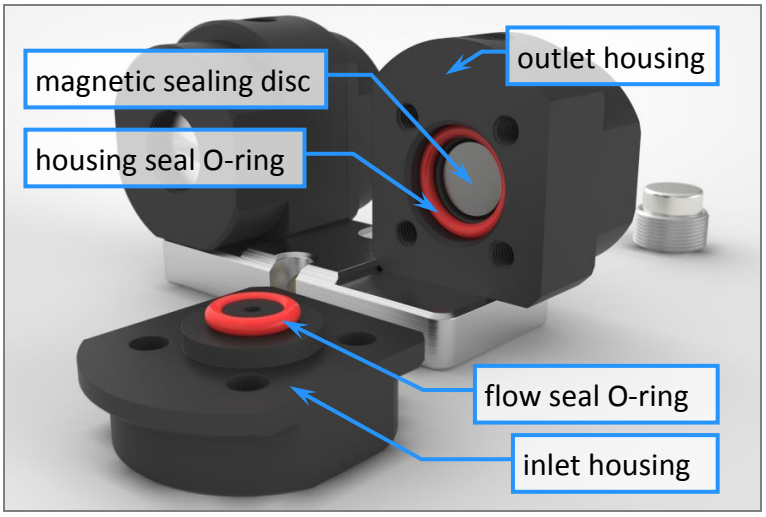
2. Remove the four housing screws using a 2.5 mm hexagon socket (Allen) key.



3. Now you may remove the inlet housing part, which contains the flow seal O-ring. In case of the check valve being fixed to a mounting plate, it may be helpful to loosen the attachment screw first to prevent it from being jammed.

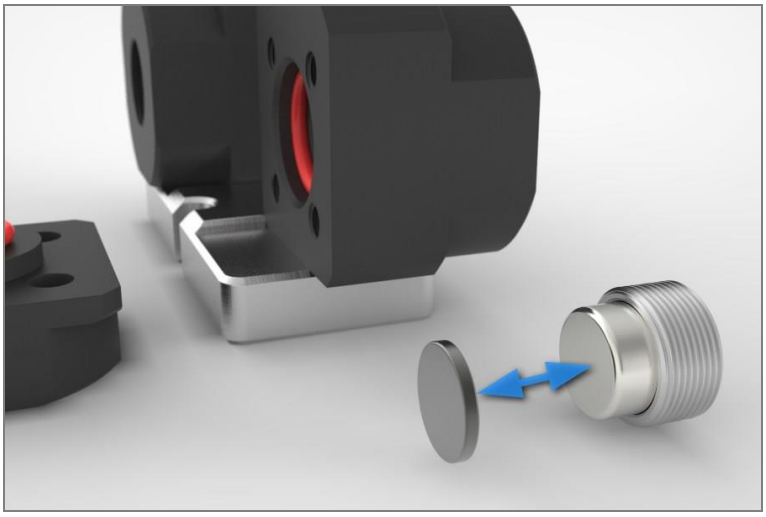


4. Remove the remaining parts for cleaning or exchange.



3.2. Assembly

1. Insert the housing seal into the outlet housing. Place the flow seal O-ring onto the peg of the inlet housing.
2. Take the sealing disc into one hand and the adjustment screw into the other hand. As both parts are magnets, they will push apart or pull together, depending on their respective orientation. Orient the sealing disc such that it is being pushed away from the adjustment screw. Insert the disc into the outlet housing whilst maintaining this relative orientation.



IMPORTANT

Please make sure to orient the magnetic sealing disc correctly during assembly. Otherwise, the valve may not close!

3. Insert the inlet housing and fix it using the four screws. Re-tighten the screw of the mounting plate.
4. Screw in the adjustment screw to its original position.